

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A bubble-actuated valve comprising:
 - a substrate layer;
 - a cap layer;
 - at least one inlet formed in at least one of the substrate layer and the cap layer;
 - at least one outlet formed in at least one of the substrate layer and the cap layer;
 - at least one flow channel, formed in at least one of the substrate layer and the cap layer, connecting the at least one inlet to the at least one outlet;
 - at least one device for forming a bubble; and
 - a moveable solid object, the moveable solid object being moveable between a first position, wherein fluid flows from the at least one inlet to the at least one outlet, and a second position, wherein fluid flow from the at least one inlet to the at least one outlet is blocked, the moveable solid object being moved by at least one of the bubble and the force generated by the formation of the bubble, the moveable solid object comprises a spherical element.
2. **(Original)** The bubble-actuated valve according to claim 1, wherein the at least one device for forming a bubble is a heating element affixed to at least one of the substrate layer or the cap layer.
3. **(Cancelled)**

4. **(Original)** The bubble-actuated valve according to claim 1, wherein the substrate layer comprises silicon.

5. **(Original)** The bubble-actuated valve according to claim 1, wherein the substrate layer comprises a polymeric material.

6. **(Original)** The bubble-actuated valve according to claim 1, wherein the substrate layer comprises a ceramic material.

7. **(Original)** The bubble-actuated valve according to claim 1, wherein the substrate layer comprises glass.

8. **(Original)** The bubble-actuated valve according to claim 1, wherein the cap layer comprises silicon.

9. **(Original)** The bubble-actuated valve according to claim 1, wherein the cap layer comprises a polymeric material.

10. **(Original)** The bubble-actuated valve according to claim 1, wherein the cap layer comprises a ceramic material.

11. **(Original)** The bubble-actuated valve according to claim 1, wherein the cap layer comprises glass.

12. **(Currently Amended)** A miniature, bubble-actuated valve comprising:
 a substrate layer;
 a cap layer;
 at least one fluid inlet formed in at least one of the substrate layer and the cap layer

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at least one flow channel, formed in at least one of the substrate layer and the cap layer, connecting the at least one fluid inlet to the at least one fluid outlet;

at least one device for creating a bubble;

a moveable solid object, the moveable solid object being moveable between a first position, wherein fluid flows from the at least one fluid inlet to the at least one fluid outlet, and a second position, wherein fluid flow from the at least one fluid inlet to the at least one fluid outlet is blocked, the moveable solid object being moved by at least one of the bubble and the force generated by the creation of the bubble, the moveable solid object comprises a spherical element; and

a latching mechanism for latching the moveable solid object when the valve is powered down.

13. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the substrate layer comprises silicon.

14. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the substrate layer comprises a polymeric material.

15. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the substrate layer comprises a ceramic material.

16. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the substrate layer comprises glass.

17. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the cap layer comprises silicon.

18. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the cap layer comprises a polymeric material.

19. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the cap layer comprises a ceramic material.

20. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the cap layer comprises glass.

21. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the at least one device for creating a bubble comprises a heating element positioned in at least one of the substrate layer and the cap layer.

22. **(Original)** The miniature, bubble-actuated valve according to claim 21, wherein the heating element is a resistive heating element.

23. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the at least one device for creating a bubble comprises an electrolytic device operatively associated with at least one of the substrate layer and the cap layer.

24. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the at least one device for creating a bubble comprises a gas supply operatively associated with at least one of the substrate layer and the cap layer.

25. **(Cancelled)**

26. **(Cancelled)**

27. **(Cancelled)**

28. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the latching mechanism comprises a small gas reservoir in at least one of the substrate layer and the cap layer.

29. **(Original)** The miniature, bubble-actuated valve according to claim 12, wherein the latching mechanism comprises a latching actuator.

30. **(Cancelled)**

31. **(Cancelled)**

32. **(Cancelled)**

33. **(Cancelled)**

34. **(Cancelled)**

35. **(Cancelled)**